

REMARKS

Reconsideration of the issues raised in the above referenced Office Action is respectfully solicited.

Enclosed is a Supplemental Declaration executed by the inventors. The Supplemental Declaration attests to each inventor having invented subject matter recited in the pending claims, which are directed to a production method. Applicants request approval of the Declaration.

The rejection of Claims 1-5 under 35 USC §112, second paragraph, as being indefinite has been considered.

Claim 1 has been amended to recite thermocompression-bonding the sheet to the close-contact medium and subsequently heating to foam the foamable raw sheet. Claim 5 has been cancelled. Therefore, withdrawal of the rejection under 35 USC §112, second paragraph, is respectfully requested.

The rejection of Claims 1-5 under 35 USC §103 as being unpatentable over Holmstrom, U.S. Patent No. 3 220 901 in view of Thoen, U.S. Patent No. 5 910 358 has been considered.

Holmstrom discloses a method of making a vinyl sponge laminate utilizing polyvinyl chloride. Holstrom discloses passing a sponge ply located between a back ply and a face ply between a tension band and fabric band. Drums 10 and 12 heat the plies located between the bands. The tension is maintained continuously under outward pressure so that the tension band 14 will exert a continuous pressure upon the vinyl sheets introduced between it and the drum 10 (see column 2, lines 5-12). However, fabric band 15 is located between the sheets and the drum 10. Heaters 31-35 based about the heated drum 10 laminate the plies during their continuous travel about the drum at a continuous pressure. Heater 36 then heats the plies to activate the blowing agent in the sponge ply 22.

Thoen discloses PVC-free foamed flooring and wall coverings. The wall covering comprises a top layer including a transparent upper wear layer, a print layer, an optional melt process intermediate reinforcement layer and a foam backing layer. Column 21, line 12 through column 25 discuss various compositions for the foam backing layer. After preparation of the various layers they appear to be combined by melt processing to form a resilient multi-layer cushion foam flooring or wall covering. Thus, Thoen does not disclose a method of compression bonding a polyolfin foamable raw sheet into contact with a close-contact medium and then foaming the

raw sheet to form a foamed sheet. Therefore, there is no reason, absent Applicants' specification to modify the method disclosed in Holmstrom to utilize a PVC-free foam layer, absent Applicants specification.

As shown on attached Sheet A, which corresponds to Figure 1, Applicants sheet 69 gets compression-bonded to the endless belt 65 at a temperature not lower than a foam initiating temperature by the nip roller 66, so that the sheet 69 is bonded to the belt 65. Bonding continues without compression-bonding by the nip roller 66. Then at the second roller, the sheet is heated at a temperature not lower than the foam initiating temperature while the sheet is bonded to the belt 36. Therefore Applicants' disclosure differs from the disclosure of the applied prior art.

Applicants amended Claim 1 recites bringing a polyolefin formable raw sheet into contact with a close-contact medium and heating the foamable raw sheet at a temperature not lower than a temperature permitting thermocompression-bonding to the close-contact medium and lower than a foam initiating temperature. Claim 1 further recites "thermocompression-bonding the sheet to the close-contact medium, the thermocompression bonding of the foamable raw sheet occurring between a nip roller and the close contact medium, the surface temperature of the nip roller being controlled to be lower than the temperature of the close-contact medium". This combination of features, and especially a nip roller, is not disclosed or suggested in the applied prior art. Holmstrom does not disclose, teach or suggest utilizing a nip roller to thermocompression bond the sheet to a close-contact medium. Rather, Holmstrom discloses a roller 12 spaced from a heated drum. Holmstrom discloses maintaining a tension continuously about the heated drum 10 to laminate the plies between a tension band and fabric band.

The Office Action states that the bight of a pressure band 14 and a fabric band 15 heated by the heating drum 11 reads on Applicants' claimed nip roller. As illustrated in Figure 1 of Holstrom, the bottom drum 12 is spaced from the heated drum 10 and does not act as a nip roller. Instead, the bands of Holstrom apply a continuous pressure to laminate the plies as discussed at column 2, lines 8-12. Such pressure by belts is lower and would have a different effect than the pressure generated using a nip roller.

For the above reasons, Claim 1 distinguishes the applied prior art.

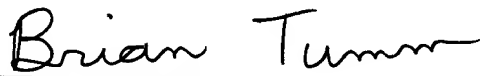
Applicants' Claim 2 recites that "the foamable raw sheet is brought into contact with the first roller through the endless belt which acts as the close-contact medium". As discussed above, Holmstrom does not disclose a nip roller, much less a nip roller and a first roller compression bonding a foamable raw sheet to an endless belt.

Claims 3 and 4 are allowable for the reasons discussed above with respect to Claim 1.

Added Claim 9 recites that "the nip roller applies a linear force across the foamable raw sheet to compression bond the raw sheet to the close-contact medium". As discussed above, Holmstrom applies a continuous force between first and second bands defining a plane surface to compression bond the plies. Applicants' nip roller applies a linear force across the foamable raw sheet to provide high compression bonding. The Holmstrom arrangement stresses the plies along a plane surface defined between the belts 14, 15 which may provide flaws along the length of the plies. Therefore, Claim 9 is allowable over the applied prior art.

Further and favorable reconsideration is respectfully solicited.

Respectfully submitted,



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Encl: Supplemental Declaration and transmittal therefor  
Sheet A  
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